HERBERT P. CRANE
President
Ameritech Communications

A Collection of Books

Thank you for inviting me to speak to you today. I am aware that this is an important group of people. You provide a valuable—no, an invaluable—service to society. You preserve literacy, aid research and keep people intellectually alive.

Thomas Carlyle remarked that the true university is a collection of books. He could not, of course, have foreseen the range of services libraries provide today—films, audio- and videotapes, microfiche, and computerized access to information of every kind.

Data processing is important today and it is the wave of the future. Literacy today is not defined only in the conventional sense. It also means *computer* literacy.

This annual Clinic was one of the first anywhere to recognize the long-term influence data processing was to have on the public sector. When these Clinics were begun, others were seeing data processing merely as a remarkable tool for business and research. The library industry looked ahead and saw what everyone knows today—that data processing is also a remarkable tool for just about *every* aspect of our lives. The home, business, recreation, and the school all benefit from data processing.

The University of Illinois at Urbana-Champaign—our host for this Clinic—has, as you may know, one of the largest data facilities of any educational institution in the entire country. And the three campus libraries constitute the largest such facility—with nearly 6 million volumes—of any state university. The library also provides access to an even larger pool of books through its Library Computer System (LCS) database.

As president of Ameritech Communications, I have an intense per-

sonal and professional interest in data processing and transmission. Ameritech is the parent institution for sixteen companies. They are:

—Five Bell telecommunications companies that handle our traditional regulated service—Illinois Bell, Indiana Bell, Michigan Bell, Ohio Bell, and Wisconsin Bell.
—Their five communications sales and service subsidiaries. These subsidiaries provide a common delivery system to meet business customer needs. That's where the distribution channel is the sales force, the equivalent of one-stop shopping for business customers.
—And we have six other Ameritech subsidiaries. Some of them handle unregulated services, while others provide regulated services that are outside the boundaries of the Bell telecommunications companies.

You are probably already familiar with several of our subsidiaries. Ameritech Mobile Communications provides cellular telephone service. We have one system in operation in Chicago. We have been in business only five months and already we have nearly 7000 subscribers—that was our projection for the first year. So we are moving ahead to expand the system to accommodate the demand. Later this year we will have cellular service available in Detroit, Cincinnati and Milwaukee.

Another subsidiary, Ameritech Publishing, was formed to consolidate directory advertising. In addition, Ameritech Credit Corporation provides financing for business customers who want to lease rather than buy their telecommunications equipment. Ameritech Services gives operational and technical support to the five Bell telecommunications companies.

Another subsidiary, Ameritech Communications, supports the telecommunications company equipment subsidiaries. It currently has equipment contracts with TIE, NEC, Ericsson, AT&T Technologies, and General Datacomm Industries.

Ameritech Development Corporation completes our family. In a way, Ameritech Development may be thought of as our research arm—it helps us expand our research and development capabilities so we can continue to improve our product and service offerings.

We are not in the business of data processing. We are in the business of *transmitting* data. We do business in one of the most data-intensive sections of the country. I should point out that Ameritech is not in competition with you. We are in the business of *transporting* information. We do not compile information. You have the databases and we provide the facilities to access those databases.

Our corporate headquarters are in Chicago and our territory covers the surrounding five-state area—though we are not limited to these boundaries. As Chairman Bill Weiss said, we are just beginning to explore the possibilities.

There is no question that Ameritech is in a business that can be of significant assistance to librarians not just today, but also—and especially—in the future. In March of last year (1983), *Business Week* ran an article that suggested that for a variety of reasons—e.g., the soaring costs of energy, buildings and published materials—technology threatens to make the printed word obsolete. I doubt very much that this will ever happen. It is possible, of course, but books are too much a part of our lives to ever be abandoned completely. What *will* happen, without a doubt, is that technology will make books more readily available along with information in other forms.

The same *Business Week* article predicts that libraries will become much smaller. But they will provide access to far more information through electronic hookups to remote computer databases and computer-controlled regional library networks.

The books to which the computer provides access must be located somewhere, so there will be large libraries, but it will become less necessary for every library to stock the books every kind of user may need. It will not matter where the material is located, because it will be economically accessed remotely. The Southeastern Library Network, for example, links 260 libraries from Virginia to Louisiana. Across the country 2400 libraries are tied into the Online Computer Library Center whose central database is in Ohio. It lists more than 7 million published works. These and similar systems are a tremendous resource for students, scholars and those who engage in research of any kind.

Your business and mine find a common ground here. You are interested in communicating the content of your resources to those who find it useful. We can provide the facilities over which that content can be transmitted, transferred and transported. Ameritech has a wide-ranging vision of its own future. We see all sorts of business opportunities to build on our core business. That core business is our communications network. The network is an arrangement of switching systems, transport facilities and support systems which we use to provide service within our areas of operation. It includes the facilities we use to interconnect with the various interexchange or long-distance companies. Our five-state network contains some 14 million access lines, more than 1200 separate switching systems and millions of circuit miles of interoffice trunks.

These elements form an extremely complex arrangement which makes it possible for our customers to communicate and transfer information among themselves. Since our network is also linked to nationwide and worldwide networks, it is also possible to reach millions of others around the world.

The network is a strong national resource. It can provide every communications and information service known in the world today including,

in many locations, full-motion video. And it is being continually modernized. Our Ameritech companies will spend $1.7 billion in 1984 to expand and modernize our network—some $500 million of that for fiber optics and digital switching and transmission systems. We will spend another $170 million for additional electronic switching equipment.

Today, two-thirds of all our customers and about 80 percent of the Ameritech region's major businesses, including our largest data users, can receive 56 kilobits service from the existing copper wire facilities without special conditioning. The data transport capabilities and service range of our wire-based access lines are also being advanced through digital systems.

There are, as I have said, more than 1200 switching systems serving Ameritech customers today. These have been the object of a widespread modernization effort, based on the deployment of stored program technology. The operation and service capabilities of these systems are controlled by a digital computer with an internally stored software program, though the information switched by these systems is in analog format.

Computer-controlled switching systems currently serve more than two out of every three Ameritech customers, or some 10 million access lines. In most of our major market areas, which are home to the large business customers who generate about 80 percent of our revenues, the percentage is even higher. The software for our most widely used system is entering its ninth generation of development, so we have achieved a sophisticated level of feature availability. With each new generation we are able to add new features which allow us to operate these systems more efficiently and to offer new services to our customers.

We are also moving ahead to install digitally based lightguide—or fiber optics—systems between our switching centers. Lightguide systems transport information over glass fibers as extremely brief pulses of laser light. They are well suited to the digital world. Though they use cables usually less than one-half inch in diameter, these systems offer significant increases in transmission capacity. Lightguide is also an interference-free transmission medium and is compatible with emerging digital switching systems. Because lightguide is interference free, it has lower error rates than other means of transmission. It permits the transmission of large amounts of data with a high degree of reliability and is particularly suited to library applications.

We are proud that much of this information age technology—i.e., stored program control, digital interoffice transmission, lightguide, digital switching—was pioneered by the Ameritech operating companies through field trials and leading edge applications. Our people were part of the process through which these technologies were perfected. They not

only understand the technology, but they have played a hands-on role in putting it to work for our customers.

Long term—1986 to 1990—we are laying the groundwork for an even more sophisticated digital network called the *Integrated Services Digital Network,* or ISDN. ISDN is a conceptual framework that includes a set of standards for serving evolving customer needs via a network capable of carrying voice, data and video services in a common, integrated and flexible manner. It is a totally digital network with all of the efficiencies of end-to-end digital connectivity. The network defined by ISDN, functions as an all-purpose communications pipeline. It provides the customer with a circuit capacity which the customer can allocate to voice, data or video. That allocation can be changed as the customer's needs change, day to day or minute by minute.

ISDN standards are still in development. Yet the basic elements of the ISDN—end-to-end digital connectivity, customer control of information transport capacity, and flexibility of interconnection with the network—are well within our capabilities. The local packet network is another capability which will help us to achieve that goal. A packet network allows voice and data traffic to share the same access lines and trunks. It provides efficient data transport for both small and large data communications customers, including data processing intensive industries and major information providers such as libraries.

A packet network also provides connections between multiple terminals and mainframe computers. Traffic from low speed terminals is packaged and multiplexed—or combined with packages from other users—on to high-speed facilities. Once on the network, packetized data can be routed to the desired destination and, once there, separated from packets originated by other customers, reassembled in sequence, and delivered.

Ameritech, through the operating company subsidiaries that offer communications equipment, will soon be offering state-of-the-art data products to complement their current lineup of electronic business equipment and network communications systems. So Ameritech can now offer its customers a total communications package including network services as well as voice and data systems. The new product line includes data network management systems, digital and analog data sets, video display terminals, printers and integrated voice and data systems.

As you can see from all this, Ameritech is moving ahead with dispatch in the new world of telecommunications brought about by the breakup of the Bell System. Our companies have the advantage of operating in a densely populated marketplace. Our facilities in place make it possible for our growth to be low-cost. This will provide a distinct advantage.

Unfortunately, we still operate in an environment that is partly unregulated and yet still partly regulated. We at Ameritech are aggressively

promoting regulatory changes that will permit us to operate as a competitive enterprise should—basing our prices on cost and allowing them to be driven by market demand.

The fact is—and history teaches us this—that regulation of our industry was instituted in order to prevent the possible abuses of monopoly. Well, monopoly does not exist any more. And neither does the reason for regulation.

It is hoped—not just for the sake of our companies and our stockholders, but for the sake of our customers—that the trend toward deregulation will continue and will accelerate, until we will some day achieve what is best for the industry—total deregulation.